United Kingdom of Great Britain and Northern Ireland

EDICT OF GOVERNMENT

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BS NA EN 1996-1-2 (2005) (English): UK National Annex to Eurocode 6. Design of masonry structures. General rules. Structural fire design

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NATIONAL ANNEX

UK National Annex to Eurocode 6: Design of masonry structures –

Part 1-2: General rules – Structural fire design

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National Annex (informative) to BS EN 1996-1-2:2005, Eurocode 6: Design of masonry structures – Part 1-2: General rules – Structural fire design

Introduction

This National Annex has been prepared by BSI Subcommittee B/525/6, *Use of masonry*. It is to be used in conjunction with BS EN 1996-1-2:2005.

NA.1 Scope

This National Annex gives:

a) decisions for the Nationally Determined Parameters described in the following subclauses of BS EN 1996-1-2:2005:

2.2(2)	actions;
2.3(2)	design value of material properties;
2.4.2(3)	member analysis;
3.3.3.1(1)	thermal elongation;
3.3.3.2(1)	specific heat capacity;
3.3.3.3	thermal conductivity;
4.5(3)	assessment by tabulated data;
Annex B	values of t_F and l_F.

b) decisions on the use of informative Annexes A, C, D and E;

c) references to non-contradictory complementary information to assist the user to apply BS EN 1996-1-2:2005 (see **NA.4**).

NA.2 Nationally Determined Parameters

*NOTE No values are given for the symbols in clauses **NA.2.1** to **NA.2.7**, as the calculation methods given in Annexes C and D will not be used in the UK. In the event that a calculation method becomes available in a non-contradictory complementary publication, the recommended values for the symbols given in the relevant notes in BS EN 1996-1-2 may be considered to be acceptable for use.*

NA.2.1 Actions [see BS EN 1996-1-2:2005, **2.2**(2)]

The value of ε_m, the emissivity of a masonry surface: nvg

NA.2.2 Design values for material properties [see BS EN 1996-1-2:2005, **2.3**(2)]

$\gamma_{M,fi}$ for thermal properties for the fire situation: nvg

$\gamma_{M,fi}$ for mechanical properties for the fire situation: nvg

NA.2.3 Member analysis
[see BS EN 1996-1-2:2005, **2.4.2**(3)]

γ_G, the partial factor for permanent actions: nvg

$\gamma_{Q,1}$, the partial factor for variable action 1: nvg

NA.2.4 Thermal elongation
[see BS EN 1996-1-2:2005, **3.3.3.1**(1)]

The values for ε_T (‰), the variation of the thermal elongation with temperature: nvg

NA.2.5 Specific heat capacity
[see BS EN 1996-1-2:2005, **3.3.3.2**(1)]

The values for c_a, the specific heat capacity with temperature: nvg

NA.2.6 Thermal conductivity
[see BS EN 1996-1-2:2005, **3.3.3.3**]

The values for λ_a, the thermal conductivity with temperature: nvg

NA.2.7 Assessment by tabulated data
[see BS EN 1996-1-2:2005, **4.5**(3)]

The values for γ_{Glo}: nvg

NOTE No value of γ_{Glo} is given, as it is only needed when fire tests are to be performed, or existing fire tests have to be interpreted.

A value may be assessed from the NA to BS EN 1996-1-1:2005, Tables NA.1 and NA.2 (γ_M) and the NA to BS EN 1990:2002, Table NA.A1.2 (noting that γ_F is given there in terms of γ_G and γ_Q, as applied to dead and imposed loads respectively). In arriving at the values of t_F and l_F in NA.3, account has been taken of the global safety factor applicable to the fire test data that was used to formulate the tables.

The tables applicable to $\alpha = 0.6$ may be used when the verification of vertical load capacity indicates that only up to 0.6 of the permitted design vertical load resistance is being used.$\alpha = 1.0$ should be used when more than 0.6 of the permitted capacity is being used.

NA.3 Annex B – Tabulated values of fire resistance of masonry walls (values of t_F and l_F) [see BS EN 1996-1-2:2005, Annex B, Note 4]

NOTE The values chosen are presented in tabular form and, for ease of use, each table retains the numbering of its counterpart in BS EN 1996-1-2:2005, Annex B. Those tables in that document that are not relevant are not given in this National Annex.

NA.3.1 Clay masonry

[see BS EN 1996-1-2:2005, Table N.B.1.1]

The values in respect of N.B.1.1 are as given in Table NA.1.1

Table NA.1.1 **Clay masonry minimum thickness of separating non-loadbearing walls (criteria EI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1.S	*Group 1S units*						
1.S.1	Mortar : general purpose, thin layer, lightweight $\rho \geq 1\ 200$						
1.S 1.1		65	65	90	100	170	170
1.S 1.2		(65)	(65)	(90)	(100)	(100)	(140)
1.	*Group 1 units*						
1.1	Mortar : general purpose, thin layer, lightweight $\rho \geq 1\ 000$						
1.1.1		65	100	100	100	170	200
1.1.2		(65)	(65)	(90)	(100)	(140)	(170)
2	*Group 2 units*						
2.1	Mortar : general purpose, thin layer, lightweight $\rho \geq 700$ 25% < perforation $\leq$ 40%						
2.1.1		100	130	215	215	240	240
2.1.2		(100)	(130)	(215)	(215)	(215)	(240)

NA.3.2 Clay masonry

[see BS EN 1996-1-2:2005, Table N.B.1.2]

The values in respect of N.B.1.2 are as given in Table NA.1.2

Table NA.1.2 **Clay masonry minimum thickness of separating loadbearing single-leaf walls (criteria REI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1S	*Group 1S units*						
1S.1	Mortar: general purpose, thin layer $\rho \geq 1\,200$						
1S.1.1 1S.1.2	$\alpha \leq 1{,}0$	90 (90)	90 (90)	100 (90)	100 (100)	170 (140)	170 (140)
1S.1.3 1S.1.4	$\alpha \leq 0{,}6$	90 (90)	90 (90)	100 (90)	100 (100)	170 (100)	170 (140)
1	*Group 1 units* Mortar: general purpose, thin layer						
1.2	$\rho \leq 1\,000$						
1.2.1 1.2.2	$\alpha \leq 1{,}0$	100 (90)	100 (100)	100 (100)	140 (100)	200 (170)	200 (170)
1.2.3 1.2.4	$\alpha \leq 0{,}6$	90 (90)	100 (90)	100 (100)	140 (100)	170 (140)	200 (170)
2	*Group 2 units*						
2.1	Mortar: general purpose, thin layer $\rho > 700$ 25% < perforation $\leq$ 40%						
2.1.1 2.1.2	$\alpha \leq 1{,}0$	100 (100)	130 (130)	215 (215)	215 (215)	240 (215)	240 (240)
2.1.3 2.1.4	$\alpha \leq 0{,}6$	100 (100)	130 (130)	215 (215)	215 (215)	240 (215)	240 (240)

NA.3.3 **Clay masonry** [see BS EN 1996-1-2, Table N.B.1.6]

The values in respect of N.B.1.6 are as given in Table NA.1.6. The tabulated thicknesses are for the loaded leaf of a cavity wall where the loaded leaf is subjected to fire. The non-loaded leaf may be of a dissimilar masonry material to the loaded leaf, but should otherwise conform to the relevant masonry materials specification. In such cases, the respective thickness of each leaf of the cavity wall, relevant to masonry unit and mortar, should be that as specified in the appropriate materials specification table.

Table NA.1.6 **Clay masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (criteria REI) for fire resistance classifications**

Row no.	**Material properties: gross density, ρ [kg/m^3]**	**Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$**					
		30	**60**	**90**	**120**	**180**	**240**
1S	*Group 1S and Group 1 units*						
1S.1	Mortar: general purpose, thin layer $\rho \geq 1\,000$						
1S.1.1 1S.1.2	$\alpha \leq 1{,}0$	90 (90)	90 (90)	100 (90)	100 (100)	170 (140)	170 (140)
1S.1.3 1S.1.4	$\alpha \leq 0{,}6$	90 (90)	90 (90)	100 (90)	100 (100)	170 (140)	170 (140)
2	*Group 2 units*						
2.1	Mortar: general purpose, thin layer $\rho \geq 700$ 25% < perforation $\leq$ 40%						
2.1.1 2.1.2	$\alpha \leq 1{,}0$	100 (100)	130 (130)	215 (215)	215 (215)	240 (240)	240 (240)
2.1.3 2.1.4	$\alpha \leq 0{,}6$	100 (100)	130 (130)	215 (215)	215 (215)	240 (240)	240 (240)

NA.3.4 Calcium silicate masonry
[see BS EN 1996-1-2:2005, Table N.B.2.1]

The values in respect of N.B.2.1 are as given in Table NA.2.1

Table NA.2.1 **Calcium silicate masonry minimum thickness of separating non-loadbearing walls (criteria EI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_f for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1 S	*Group 1S*						
1 S.1	Mortar : general purpose $\rho \geqslant 1600$						
1 S.1.1 1.S 1.2		65 (65)	65 (65)	90 (90)	100 (100)	170 (100)	170 (140)
1	*Group 1*						
1.2	Mortar: general purpose, thin layer $\rho \geqslant 1000$						
1.2.1 1.2.2		65 (65)	100 (65)	100 (90)	100 (100)	170 (140)	200 (170)

NA.3.5 Calcium silicate masonry
[see BS EN 1996-1-2:2005, Table N.B.2.2]

The values in respect of N.B.2.2 are as given in Table NA.2.2

Table NA.2.2 **Calcium silicate masonry minimum thickness of separating loadbearing single-leaf walls (criteria REI) for fire resistance classifications**

Row Number	Material properties gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1S	*Group 1S units*						
1S.1	Mortar: general purpose, thin layer $\rho \geqslant 1\,600$						
1S.1.1 1S.1.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	100 (90)	100 (100)	190 (140)	190 (190)
1S.1.3 1S.1.4	$\alpha \leqslant 0{,}6$	90 (90)	90 (90)	100 (90)	100 (100)	170 (100)	190 (190)
1	*Group 1 units*						
1.1	Mortar: general purpose, thin layer $\rho \geqslant 1\,000$						
1.1.1 1.1.2	$\alpha \leqslant 1{,}0$	100 (90)	100 (100)	100 (100)	190 (100)	200 (170)	200 (170)
1.1.3 1.1.4	$\alpha \leqslant 0{,}6$	90 (90)	100 (90)	100 (100)	170 (100)	190 (170)	200 (170)

NA.3.6 Calcium silicate masonry
[see BS EN 1996-1-2:2005, Table N.B.2.6]

The values in respect of N.B.2.6 are as given in Table NA.2.6. The tabulated thicknesses are for the loaded leaf of a cavity wall where the loaded leaf is subjected to fire. The non-loaded leaf may be of a dissimilar masonry material to the loaded leaf, but should otherwise conform to the relevant masonry materials specification. In such cases, the respective thickness of each leaf of the cavity wall, relevant to masonry unit and mortar, should be that as specified in the appropriate materials specification table.

Table NA.2.6 **Calcium silicate masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (criteria REI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1S	*Group 1S and Group 1 units*						
1S.1	Mortar: general purpose, thin layer $\rho \geqslant 1\,000$						
1S.1.1	$\alpha \leqslant 1{,}0$	90	90	100	100	170	170
1S.1.2		(90)	(90)	(90)	(100)	(140)	(140)
1S.1.3	$\alpha \leqslant 0{,}6$	90	90	100	100	170	170
1S.1.4		(90)	(90)	(90)	(100)	(140)	(140)

NA.3.7 Dense and lightweight aggregate concrete masonry [see BS EN 1996-1-2:2005, Table N.B.3.1]

The values in respect of N.B.3.1 are as given in Table NA.3.1

Table NA.3.1 **Dense and lightweight aggregate concrete masonry minimum thickness of separating non-loadbearing separating walls (criteria EI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1	*Group 1 units* Mortar: general purpose, thin layer, lightweight						
1.1	lightweight aggregate $400 \leqslant \rho \leqslant 1\,700$						
1.1.1		50	70	75	75	90	100
1.1.2		(50)	(50)	(60)	(70)	(75)	(75)
1.2	dense aggregate $1\,200 \leqslant \rho \leqslant 2\,400$						
1.2.1		50	70	90	90	100	100
1.2.2		(50)	(50)	(70)	(75)	(90)	(100)
2	*Group 2 units* Mortar: general purpose, thin layer, lightweight						
2.1	lightweight aggregate $240 \leqslant \rho \leqslant 1\,300$						
2.1.1		50	70	75	100	115	125
2.1.2		(50)	(50)	(70)	(75)	(90)	(100)
2.2	dense aggregate $720 \leqslant \rho \leqslant 1\,800$						
2.2.1		90	100	125	140	140	140
2.2.2		(70)	(80)	(90)	(100)	(125)	(125)

NA.3.8 Dense and lightweight aggregate concrete masonry [see BS EN 1996-1-2:2005, Table N.B.3.2]

The values in respect of N.B.3.2 are as given in Table NA.3.2

Table NA.3.2 **Dense and lightweight aggregate concrete masonry minimum thickness of separating loadbearing single-leaf walls (criteria REI) for fire resistance classifications**

Row No.	Material properties: gross density ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1	*Group 1 units* Mortar: general purpose, thin layer, lightweight						
1.1	lightweight aggregate $400 \leqslant \rho \leqslant 1\,700$						
1.1.1	$\alpha \leqslant 1{,}0$	90	90	100	100	140	150
1.1.2		(90)	(90)	(90)	(90)	(100)	(100)
1.1.3	$\alpha \leqslant 0{,}6$	70	75	90	90	100	100
1.1.4		(60)	(60)	(75)	(75)	(90)	(90)
1.2	dense aggregate $1\,200 \leqslant \rho \leqslant 2\,400$						
1.2.1	$\alpha \leqslant 1{,}0$	90	90	90	100	140	150
1.2.2		(90)	(90)	(90)	(90)	(100)	(100)
1.2.3	$\alpha \leqslant 0{,}6$	75	75	90	90	100	140
1.2.4		(60)	(75)	(75)	(75)	(90)	(100)
2	*Group 2 units* Mortar: general purpose, thin layer, lightweight						
2.1	lightweight aggregate $240 \leqslant \rho \leqslant 1\,300$						
2.1.1	$\alpha \leqslant 1{,}0$	90	100	100	100	140	150
2.1.2		(90)	(90)	(90)	(100)	(140)	(140)
2.1.3	$\alpha \leqslant 0{,}6$	75	90	90	100	125	140
2.1.4		(75)	(75)	(75)	(90)	(100)	(125)
2.2	dense aggregate $720 \leqslant \rho \leqslant 1800$						
2.2.1	$\alpha \leqslant 1{,}0$	100	100	140	140	140	190
2.2.2		(90)	(100)	(100)	(140)	(140)	(150)
2.2.3	$\alpha \leqslant 0{,}6$	90	100	100	140	140	150
2.2.4		(75)	(90)	(90)	(125)	(125)	(140)

NA.3.9 Dense and lightweight aggregate concrete masonry [see BS EN 1996-1-2:2005, Table N.B.3.6]

The values in respect of N.B.3.6 are as given in Table NA.3.6. The tabulated thicknesses are for the loaded leaf of a cavity wall where the loaded leaf is subjected to fire. The non-loaded leaf may be of a dissimilar masonry material to the loaded leaf, but should otherwise conform to the relevant masonry materials specification. In such cases, the respective thickness of each leaf of the cavity wall, relevant to masonry unit and mortar, should be that as specified in the appropriate materials specification table.

Table NA.3.6 **Dense and lightweight aggregate concrete masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (criteria REI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_f for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1	*Group 1 units* Mortar: general purpose, thin layer, lightweight						
1.1	lightweight aggregate $400 \leqslant \rho \leqslant 1\,700$						
1.1.1 1.1.2	$\alpha \leqslant 1{,}0$	90 (90)	190 (90)	100 (90)	100 (100)	140 (100)	150 (100)
1.1.3 1.1.4	$\alpha \leqslant 0{,}6$	70 (60)	75 (60)	90 (75)	90 (75)	100 (90)	100 (90)
1.2	dense aggregate $1\,200 \leqslant \rho \leqslant 2\,400$						
1.2.1 1.2.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	100 (90)	100 (90)	140 (100)	150 (100)
1.2.3 1.2.4	$\alpha \leqslant 0{,}6$	75 (60)	75 (75)	90 (75)	90 (75)	100 (90)	140 (125)
2	*Group 2 units* Mortar: general purpose, thin layer, lightweight						
2.1	lightweight aggregate $240 \leqslant \rho \leqslant 1\,300$						
2.1.1 2.1.2	$\alpha \leqslant 1{,}0$	90 (90)	100 (90)	100 (90)	100 (100)	140 (140)	150 (140)
2.1.3 2.1.4	$\alpha \leqslant 0{,}6$	70 (70)	90 (70)	90 (70)	100 (90)	125 (100)	140 (125)
2.2	dense aggregate $720 \leqslant \rho \leqslant 1\,800$						
2.2.1 2.2.2	$\alpha \leqslant 1{,}0$	90 (90)	100 (90)	100 (100)	100 (100)	140 (140)	190 (150)
2.2.3 2.2.4	$\alpha \leqslant 0{,}6$	90 (70)	100 (90)	100 (90)	100 (100)	140 (125)	150 (140)

NA.3.10 Autoclaved aerated concrete masonry [see BS EN 1996-1-2:2005, Table N.B.4.1]

The values in respect of N.B.4.1 are as given in Table NA.4.1

Table NA.4.1 **Autoclaved aerated concrete masonry minimum thickness of separating non-loadbearing walls (criteria EI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1	*Group 1 and 1S units*						
1.1	Mortar: general purpose, thin layer						
1.1.1 1.1.2	$350 \leqslant \rho \leqslant 500$	65 (50)	65 (65)	70 (70)	70 (70)	100 (100)	100 (100)
1.1.3 1.1.4	$500 \leqslant \rho \leqslant 1\,000$	50 (50)	60 (50)	60 (50)	65 (65)	75 (75)	100 (100)

NA.3.11 Autoclaved aerated concrete masonry [see BS EN 1996-1-2:2005, Table N.B.4.2]

The values in respect of N.B.4.2 are as given in Table NA.4.2

Table NA.4.2 **Autoclaved aerated concrete masonry minimum thickness of separating loadbearing single-leaf walls (criteria REI) for fire resistance classifications**

Row No.	Material properties gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1	*Group 1 and 1S units*						
1.1	Mortar: general purpose, thin layer $350 \leqslant \rho \leqslant 500$						
1.1.1 1.1.2	$\alpha \leqslant 1{,}0$	100 (90)	100 (100)	120 (110)	125 (125)	150 (150)	150 (150)
1.1.3 1.1.4	$\alpha \leqslant 0{,}6$	100 (90)	100 (100)	100 (100)	120 (100)	140 (120)	150 (120)
1.2	Mortar: general purpose, thin layer $500 \leqslant \rho \leqslant 1\,000$						
1.2.1 1.2.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	100 (90)	100 (90)	140 (100)	150 (100)
1.2.3 1.2.4	$\alpha \leqslant 0{,}6$	90 (90)	90 (90)	100 (90)	100 (90)	120 (100)	150 (100)

NA.3.12 Autoclaved aerated concrete masonry [see BS EN 1996-1-2:2005, Table N.B.4.6]

The values in respect of N.B.4.6 are as given in Table NA.4.6. The tabulated thicknesses are for the loaded leaf of a cavity wall where the loaded leaf is subjected to fire. The non-loaded leaf may be of a dissimilar masonry material to the loaded leaf, but should otherwise conform to the relevant masonry materials specification. In such cases, the respective thickness of each leaf of the cavity wall, relevant to masonry unit and mortar, should be that as specified in the appropriate materials specification table.

Table NA.4.6 **Autoclaved aerated concrete masonry minimum thickness of each leaf of separating loadbearing cavity walls with one leaf loaded (criteria REI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	60	90	120	180	240
1	*Group 1 and 1S units*						
1.1	Mortar: general purpose, thin layer $350 \leqslant \rho \leqslant 500$						
1.1.2 1.1.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	100 (100)	100 (100)	150 (150)	150 (150)
1.1.3 1.1.4	$\alpha \leqslant 0{,}6$	90 (90)	90 (90)	90 (90)	100 (100)	150 (150)	150 (150)
1.2	Mortar: general purpose, thin layer $500 \leqslant \rho \leqslant 1\,000$						
1.2.1 1.2.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	100 (100)	100 (100)	140 (140)	150 (150)
1.2.3 1.2.4	$\alpha \leqslant 0{,}6$	90 (90)	90 (90)	100 (100)	100 (100)	125 (125)	150 (150)

NA.3.13 Manufactured stone masonry [see BS EN 1996-1-2:2005, Table N.B.5.1]

The values in respect of N.B.5.1 are as given in Table NA.5.1

Table NA.5.1 **Manufactured stone masonry minimum thickness of separating non-loadbearing separating walls (criteria EI) for fire resistance classifications**

Row No.	Material properties gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	60	90	120	180	240
1	*Group 1 units*						
1.1	Mortar: general purpose, thin layer, lightweight $1\,200 \leqslant \rho \leqslant 2\,400$						
1.1.1 1.1.2		50 (50)	70 (50)	90 (70)	90 (75)	100 (90)	100 (100)

NA.3.14 Manufactured stone masonry
[see BS EN 1996-1-2:2005, Table N.B.5.2]

The values in respect of N.B.5.2 are as given in Table NA.5.2

Table NA.5.2 **Manufactured stone masonry minimum thickness of separating loadbearing single-leaf walls (criteria REI) for fire resistance classifications**

Row No.	Material properties gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	60	90	120	180	240
1	*Group 1 units*						
1.2	Mortar: general purpose, thin layer, lightweight $1\,200 \leqslant \rho \leqslant 2\,400$						
1.2.1 1.2.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	90 (90)	100 (90)	140 (100)	150 (100)
1.2.3 1.2.4	$\alpha \leqslant 0{,}6$	75 (60)	75 (75)	90 (75)	90 (75)	100 (90)	140 (100)

NA.4 Decisions on the status of the informative annexes

BS EN 1996-1-2:2005 informative Annexes A and E may be used.

BS EN 1996-1-2:2005 informative Annexes C and D should not be used.

NA.5 References to non-contradictory complementary information

PD XXXX: 200Y, TITLE, [a standard comprising complementary and non-contradictory material taken from BS 5628-1, BS 5628-2 and BS 5628-3][1)]

Morton, J. *Designers' guide to EN 1996-1-1 Eurocode 6: Design of masonry structures-Common rules for reinforced and unreinforced masonry structures*[1)] London: Thomas Telford Ltd.

Manual for the design of plain masonry building structures to Eurocode 6[1)] London: Institution of Structural Engineers

EUROCODE 6 HANDBOOK[1)] London: Department of Communities and Local Government.

Eurocode for Masonry, BS EN 1996: *Guidance and Worked Examples*[1)] Surrey: British Masonry Society

Morris, W.A., Read, R.E.H. and Cooke, G.M.E. *Guidelines for the construction of fire resisting structural elements (1988).* London: BRE.

Introduction to the fire safety engineering of structures (2003). London: The Institution of Structural Engineers.

[1)] In preparation.

Bibliography

NA to BS EN 1996-1-1:2005, *UK National Annex to Eurocode 6: Design of masonry structures – Part 1-1: General rules for reinforced and unreinforced masonry structures*

NA to BS EN 1990:2002, *UK national annex for Eurocode 0 – Basis of structural design*

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